

## DECLARATION

I, Norio Kaneko, 743 Naka Akutsu, Takanezawa-machi, Shioya-gun, Tochigi-ken, Japan, who entered MANI INC. in 1993 and is involved developing project for a medical binocular stereo-microscope from 1999, am the person who took photographs and wrote the experimental report attached hereto. I state that the photographs in the report show true results of the experiments and following conclusion is obtained.

### Conclusion

#### (1) The Present Invention

(i) the stereomicroscope has a single illumination optical system.

(ii) the illumination unit has an optical axis arranged inside a circle which has a diameter connecting the optical axes of the right and left observation optical systems.

#### (2) Buhler (US 3,909,106)

A stereomicroscope of Buhler has two illumination systems (16) (17), even if a center of the one of the illumination systems (16) is on a circle which has a diameter connecting the optical axes of the right and left observation optical systems.

Thus, Buhler does not provide the substantial features (i) (and (ii) above of the present invention.

(3) G9408066.6 reference

A stereomicroscope, as shown in Fig. 3 of this reference, has two illumination systems (21) and (21)+(14), even if a center of the one of the illumination systems (21) is on a circle which has a diameter connecting the optical axes of the right and left observation optical systems.

Thus, the stereomicroscope of this reference does not provide the substantial features (i) (and (ii) above of the present invention.

A stereomicroscope shown in Fig. 1 of this reference has single illumination system (17)+(14), but the center of the illumination system (14) is outside the circle.

Thus, the stereomicroscope fails to provide the substantial feature (ii) above of the present invention.

(4) Explanation of the experimental report

The experiments conducted by me, as discussed above, show that the combination of the features (i) and (ii) is important to have an effect the present invention is expected.

The features (i) and (ii) are necessary for making small and clear shade around a subject to be observed and, at the same time, this is very important for the stereomicroscope because the shade is observed from right and left side to recognize the subject as three dimensional object.

Photographs presented above show that the features (i) and (ii) are very important to observe the subject three dimensionally, especially for a tooth which has concaved portion inside.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Norio Kaneko

Norio Kaneko

April 18, 2005

Date: April 18, 2005

Experiment (1)

Date of the experiment: April 1, 2003

Place of the experiment:

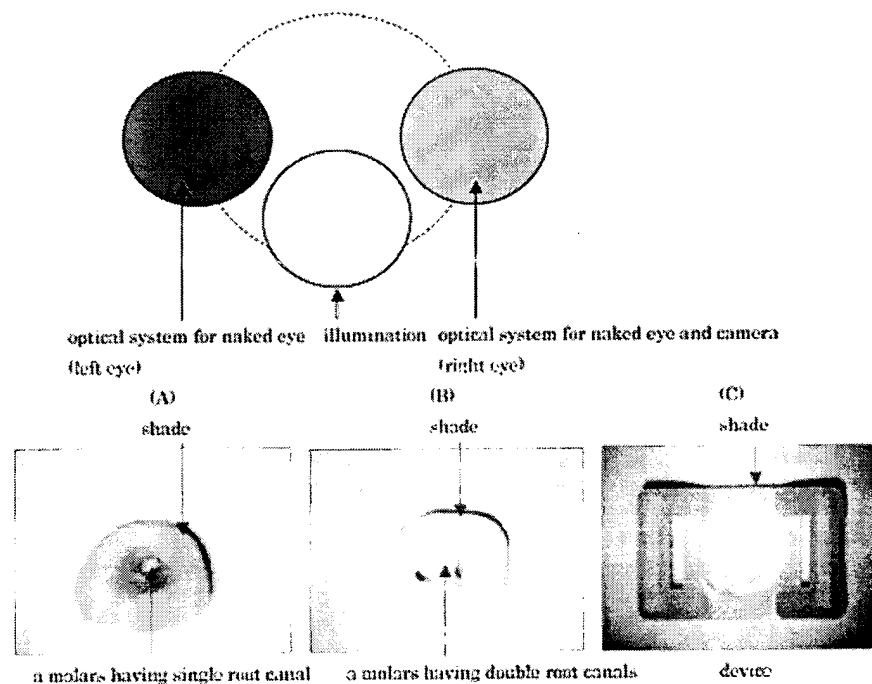
Laboratory in MANI INC. 6743 Naka Akutsu, Takanezawamachi, Shiota-gun, Tochigi-ken, Japan

Equipment: Medical binocular stereo-microscope type DMS25Z produced by Mani INC

Camera: Coolpix 4500 produced by Nikon

Researcher: Norio Kaneko

This stereo-microscope used for this experiment(1) has a single illumination system positioned close to the observation systems.



Specimen

(A) : A real human molar removed from someone's mouth. This molar has a single root canal cut to apical foramen. This photograph is focused on the apical foramen.

(B) : A real human molar removed from someone's mouth. This molar has double root canals cut to around the root canal. This photograph is focused on the root canal.

(C) : AM-shape cable clamp as an artificial subject dimensioned length 11mm, width 17mm and height 9mm.

Remarks

For the illumination system is close to the observation system, illumination light reaches to an inner part of the recess and it is suitable for observation of concaved portion. At the same time, because the single illumination system at this position can make short and clear shade around the subject, it is possible to make three dimensional observation.

In observation by double naked eyes, the shade is observed by a right eye and a left eye respectively, the subject could be recognized as a three dimensional object with the single clear shade.

Experiment (2)

Date of the experiment: April 4, 2005

Place of the experiment:

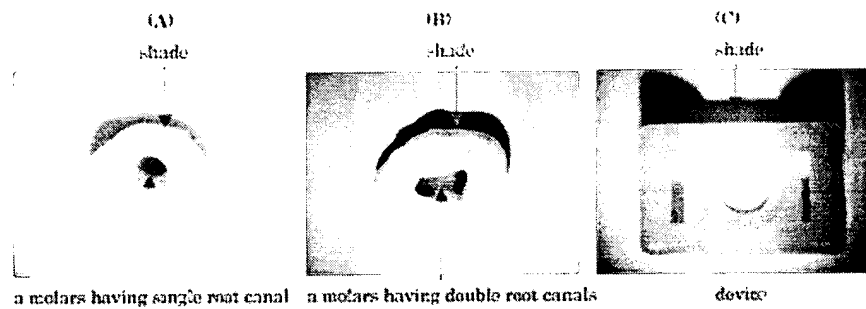
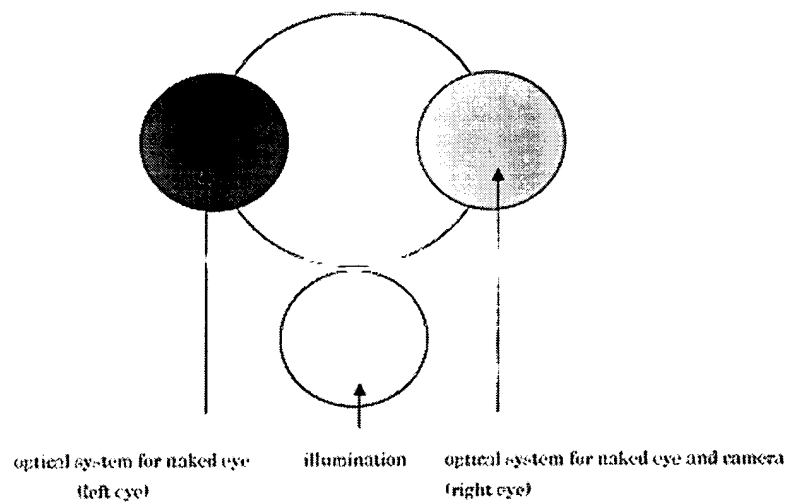
Laboratory in MANI INC. 643 Naka Akutsu, Takanezawa-machi, Shiogajun, Tochigi-ken, Japan

Equipment: Medical binocular stereo-microscope type DMS25Z produced by Mani INC (remodeled)

Camera: Coolpix1500 produced by Nikon

Researcher: Norio Kaneko

This stereo-microscope used for this experiment(2) has a single illumination system positioned apart from the observation systems.



**Specimen**

- (A) : A real human molar removed from someone's mouth. This molar has a single root canal cut to apical foramen. This photograph is focused on the apical foramen.
- (B) : A real human molar removed from someone's mouth. This molar has double root canals cut to around the root canal. This photograph is focused on the root canal.
- (C) : AM-shape cable clamp as an artificial subject dimensioned length 11mm, width 17mm and height 9mm.

**Remarks**

Because the illumination system is apart from the observation system, light from the illumination system cannot reach to the inner part of root canals and difficult to observed the part. At the same time, the shade made by the illumination system becomes wide and unclear

Experiment (1)

Date of the experiment: April 4, 2005

Place of the experiment:

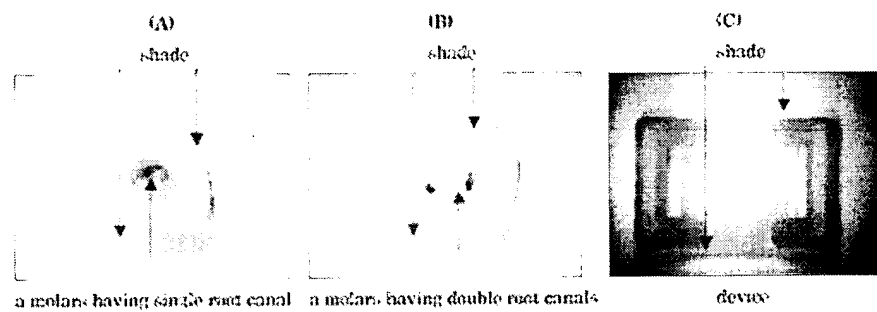
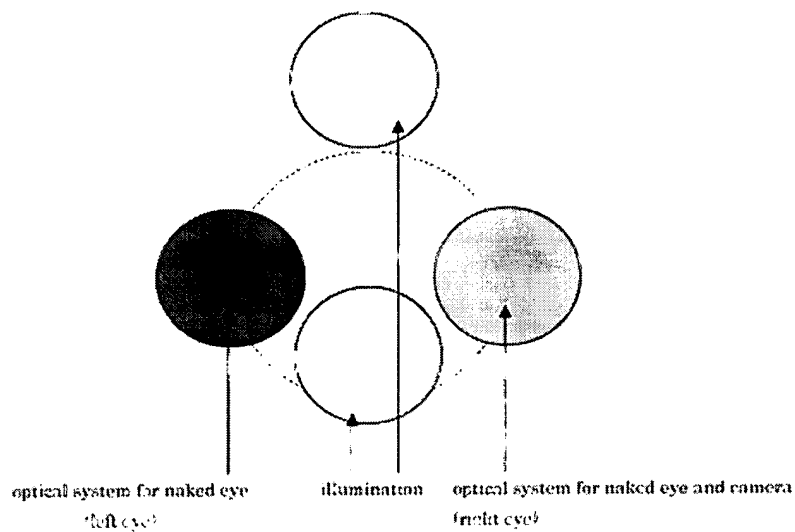
Laboratory in MANI INC. 6743 Naka Akutsu, Takanezawa-machi, Shioga-gun, Tochigi-ken, Japan

Equipment: Medical binocular stereo-microscope type DMS25Z produced by Mani INC (remodeled)

Camera: Coolpix 1500 produced by Nikon

Researcher: Norio Kaneko

This stereo-microscope used for this experiment(2) has double illumination systems between the observation systems.





#### Specimen

- (A) : A real human molar removed from someone's mouth. This molar has a single root canal cut to apical foramen. This photograph is focused on the apical foramen.
- (B) : A real human molar removed from someone's mouth. This molar has double root canals cut to around the root canal. This photograph is focused on the root canal.
- (C) : AM-shape cable clamp as an artificial subject dimensioned length 11mm, width 17mm and height 9mm.

#### Remarks

Because the subject is illuminated from two directions opposite to each other, shade made by the illumination systems is pale and unclear.

At the same time, a inner part of the root canal which is difficult to be illuminated from both direction tends to be dark comparing with an outer part of the tooth which is illuminated by both side. Because the contrast between the illuminated part and the non-illuminated part becomes large, the non illuminated part is difficult to be observed

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